Marvell PXA910 Mass Market Smartphone Communication Platform

Cost Efficient High Performance Modem Integrated Cellular Platform Solutions

PRODUCT OVERVIEW

The Marvell® PXA910 communication platform is an advanced, highly integrated 3G platform for multimedia-centric handset. The PXA910 platform solution incorporates the performance of Marvell's mobile application processor with Marvell's mature and proven 3G technology to provide low-cost Linux™ and Android™ mobile handset platform.

The combination of Marvell's advanced, high-performance, low-power application processor technology-in addition to Wideband Code Division Multiple Access (WCDMA) / High Speed Downlink Packet Access (HSDPA) / Enhanced Data for GSM Environment (EDGE) communication support for next generation cellular services-enables the breakthrough end-user experiences for imaging, HD video, music, games, and other popular handset applications.

With Marvell's 3G technology, seamless wireless connectivity, application processing, and support for next generation cellular data services — the new PXA910-powered smartphones offer exceptional performance for browsing, instant live video, access to personal music, 3D gaming, and other popular handset applications at attractive price points. The PXA910 supports Android and other major mobile operating systems (OS).

BLOCK DIAGRAM

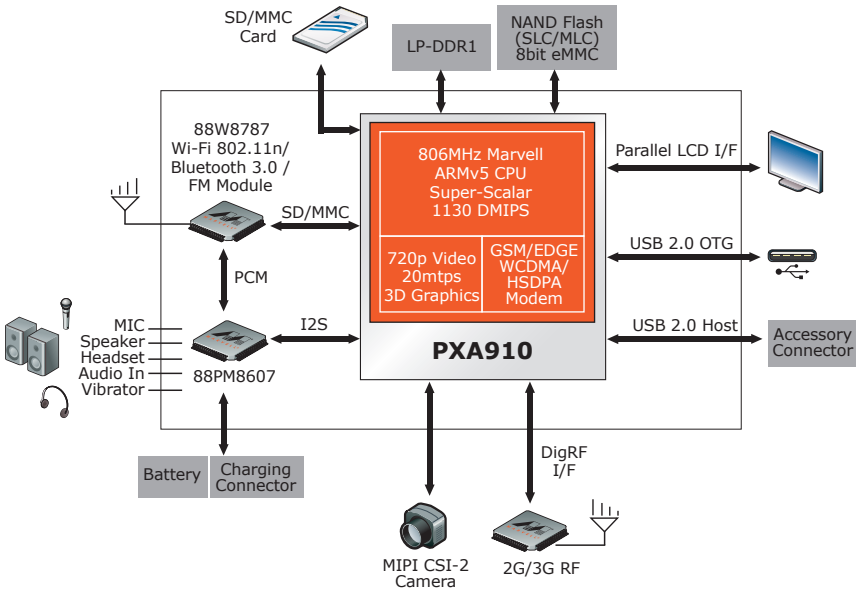

Fig 1. Marvell PXA910 Smartphone Platform

FEATURES	BENEFITS
• Cellular Modem Solution	• Support 3GPP Release 5, integrated 3G HSDPA modem with 3.6Mbps downlink rate as well as Class 12 EDGE modem for flexibility and worldwide roaming • 3G/WLAN/BT Coexistence Enables support for IMS, VoIP and other advanced carrier services • Fully integrated platform solution validated via extensive IOT, GCF, worldwide field trial and chosen by top tier phone manufactures • Industry-proven, reduced size RF solution with multi-band 3G and quad-band EDGE support • Dual sim dual standby ready
• Tri-core, Shared Memory Hardware Architecture – Dedicated Modem and Applications Processor Cores – Shared External Memory Interface	• Enables reuse of a common application processor software stack across multiple air interfaces and cellular networks • Prevents unwanted performance interactions/dependencies between AP and modem subsystems • Protects cellular network from application processor security threats • High-performance internal memory architecture enables sharing of external memory without the cost/space burden for independent flash and DDR • High performance, efficient inter-processor communication interface between AP and modem using shared external DDR

FEATURES (continued)	BENEFITS
• Modem processors – Modem RISC Core – Modem DSP Core	• Marvell-designed ARM9 with packet processing accelerators and L1/L2 caches • Micro-Signal Architecture VLIW DSP core with L1/L2 caches
• CPU processor	• Marvell CPU Technology with ARMv5 core supports up to 806 MHz clock speed (1130 DMIPS operations), ARMv5 ISA compliant with GPS instruction set extensions, and Wireless MMX2 • L1 instruction and data Cache • L2 Cache • Internal SRAM • Internal Boot ROM - Secure Boot ROM supports boot from NAND • Mobile Security through Secure Boot, Root Key Protection, Secure JTAG re-enablement; supports multiple life cycle states which protect processor secrets at Chip Manufacturing, Device Manufacturing, Device Deployment and Failure Analysis stages
• Multimedia – Video – 3D – Audio – Imaging – Display	• Video Playback 720p at 30 fps for H.264, WMV, MPEG-4, H.263; Video Capture D1 at 30 fps for H.264, WMV, MPEG-4, H.263 • 3D Graphics capability up to 10M triangles/s sustained (20M triangles/s peak at 50% cull rate) and 200M pixels/s fill rate. Integrated 2D accelerator; Supports industry standard APIs. • Marvell's unique Audio Accelerator Subsystem offers low power audio playback via audio streaming • Image Sensor support for primary and secondary smart image sensors with MIPI CSI-2 and parallel interfaces; Supports one MIPI-CSI2 serial interface • LCD Controller supports parallel LCD displays over an 8/16/18-bit parallel smart panel interface or a 16/18/24bit parallel active matrix interface with sync signals; Primary/secondary display supports up to 4 simultaneous overlays with base + rotation scaling
• DMA Controller Interface	• Interface with companion chips configured as VLIO devices using flow through mode DMA transfers

APPLICATIONS

This highly integrated handset platform features the Marvell PXA910 single-chip application and communication processors, with a Marvell integrated power management and audio companion chip, RF transceiver and Marvell 802.11n WLAN/BT/FM TX/RX.

THE MARVELL ADVANTAGE: Marvell chipsets come with complete reference designs which include board layout designs, software, manufacturing diagnostic tools, documentation, and other items to assist customers with product evaluation and production. Marvell's worldwide field application engineers collaborate closely with end customers to develop and deliver new leading-edge products for quick time-to-market. Marvell utilizes world-leading semiconductor foundry and packaging services to reliably deliver high-volume and low-cost total solutions.

ABOUT MARVELL: Marvell is a leader in storage, communications, and consumer silicon solutions. Marvell's diverse product portfolio includes switching, transceiver, communications controller, processor, wireless, power management, and storage solutions that power the entire communications infrastructure, including enterprise, metro, home, storage, and digital entertainment solutions. For more information, visit our Web site at www.marvell.com.

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